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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,435	09/18/2000	Takashi Iwade	H9876.0055/P055	4783

24998 7590 11/20/2002

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EXAMINER
YANG, RYAN R

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

HG

Office Action Summary	Application No.	Applicant(s)	
	09/664,435	IWADE ET AL.	
	Examiner	Art Unit	
	Ryan R Yang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-9 are pending in this application. Claims 1, 4 and 7 are independent claims. In the Amendment. This action is non-final.

2. This application claims foreign priority dated 9/16/1999.

3. The present title of the invention is "Method of forming polygon image and image processing apparatus using the same".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Oka (5,912,671).

As per claim 1, Oka discloses a method of forming a polygon image, comprising the steps of:

obtaining a plurality of polygons having normal line data as apex data and constituting a model (Figure 11B);

sorting the model constituted by the plurality of polygons into polygons of a first color part and polygons of a second color part by boundary lines consisting of the direction of a light source and normal lines of the model (Figure 12 SP14);

pasting up a first mono-color texture on the sorted polygons having the first color part, and pasting up a second mono-color texture on the sorted polygons having the second color part (Figure 16); and

dividing the polygons intersecting the boundary lines along the boundary lines, pasting up the first mono-color texture on the polygons belonging to the first color part out of the divided polygons, and pasting up the second mono-color texture on the polygons belonging to the second color part (Figure 18B).

6. As per claim 2, Oka demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses sorting by the boundary lines into polygons of the first color portion and polygons of the second color part is implemented by:

acquiring an inner product value of the normal line of the apexes of the respective polygons and the normal line of the light source, from the direction of the light source and the normal line of the model with respect to the plurality of polygons (Figure 12), and then

sorting into polygons having the same polarity of the thus acquired inner product at the respective apexes and polygons having different polarities of the thus acquired inner product at the respective apexes (Figure 12 SP14).

7. As per claim 3, Oka demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses the intersectional position of the polygon intersecting a boundary line is acquired from a proportional relation with the inner product of each of two apexes of a boundary-line intersecting side of the polygon

intersecting the boundary lines when the inner product value at the intersectional position is 0 ("In certain embodiments of the invention, the end positions of horizontally extending line segments slicing a polygonal area at a predetermined distance from one of the apex points thereof are used as the boundary points and color data of the intermediate points are produced based on such boundary points by interpolation", column 5, line 51-56).

8. As per claim 4, Oka discloses aAn image processing apparatus comprising:

control means for obtaining a plurality of polygons having normal line data as apex data and constituting a model (Figure 11B),

the control means sorting the model constituted by the plurality of polygons into polygons of a first color part and polygons of a second color part by boundary lines consisting of the direction of a light source and normal lines of the model (Figure 12 SP14);

a rendering processor for pasting up a first mono-color texture on the thus sorted polygons having the first color part, and pasting up a second mono-color texture on the thus sorted polygons having the second color part (Figure 16), and

dividing the polygon intersecting the boundary lines along the boundary lines, pasting up the first mono-color texture on the polygon belonging to the first color part out of the thus divided polygons, and pasting up the second mono-color texture on the polygon belonging to the second color part (Figure 18B).

Regarding the "means plus function" language, the means refer to the software methods executed on generically disclosed hardware explicitly disclosed by Oka. It is further noted that both software and hardware means are functionally equivalent.

9. As per claim 5, Oka demonstrated all the elements as applied to the rejected independent claim 4, supra, and further discloses sorting by the boundary lines into polygons of the first color portion and polygons of the second color part in the control means is implemented by:

acquiring the inner product value of the normal lines of the apexes of the respective polygons and the normal line of the light source (Figure 12), and then

sorting into polygons having the same polarity of the thus acquired inner product at the respective apexes and polygons having different polarities of the acquired inner product at the respective apexes (Figure 12 SP14).

10. As per claim 6, Oka demonstrated all the elements as applied to the rejected independent claim 4 supra, and further discloses the intersectional position of a side of the boundary-line-intersecting polygon and the boundary line is acquired from a proportional relation with the inner product of each of two apexes of the boundary- line-intersecting side of the polygon intersecting the boundary lines when the inner product value at the intersectional position is 0 ("In certain embodiments of the invention, the end positions of horizontally extending line segments slicing a polygonal area at a predetermined distance from one of the apex points thereof are used as the boundary points and color data of the intermediate points are produced based on such boundary points by interpolation", column 5, line 51-56).

11. As per claims 7-9, since Oka's system is a computer with memory (Figure 3 302) it is obvious that his system has the memory containing the program to perform the functions as discloses in claims 1-3 and, therefore, are similarly rejected as claims 1-3, respectively.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Inquiries

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ryan Yang** whose telephone number is **(703) 308-6133**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ryan Yang
November 18, 2002

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600